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NASA AIRBORNE OBSERVATORY'S TELESCOPE ASSEMBLY ARRIVES

NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA), the largest airborne observatory in the world, will receive a key component today when its telescope assembly arrives in Waco, Texas, completing a 7,000-mile journey from Germany.

Developed by DLR, the German Aerospace Center, located in Bonn, the 98.4-inch (2.5- meter)-diameter telescope has spent the past five-and-a-half years being designed and built. MAN Technologies AG, Mainz and Augsburg, Germany, built the telescope, and its optics were supplied by Kayser-Threde Corp., Munich, Germany. Several other sub-contractors located in Europe also helped fabricate the complex telescope.

"We're very excited to be taking delivery of the world's largest airborne telescope, provided by our German partners," said NASA SOFIA project manager Chris Wiltsee of NASA Ames Research Center. "They've done a first-rate job in its development and should be very proud of their accomplishment. We're looking forward to working closely with them to complete this magnificent observatory," added Wiltsee.

"This event is a key step on the way to completing a unique and very versatile astronomy facility, which will reveal hidden regions of space and open the door to new vistas of discovery," said SOFIA program manager Cliff Imprescia of NASA Ames.

Owing to their large size, the telescope's three largest components were transported aboard a huge Airbus Beluga cargo aircraft. The largest of the components, the suspension assembly that provides the telescope's center support structure, weighs approximately 25,000 pounds and measures some15 feet in diameter in its shipping fixture. The primary mirror assembly weighs approximately 4,500 pounds and the metering structure, which holds the telescope's secondary mirror assembly, weighs approximately 2,000 pounds.

Workers will first store the telescope assembly's components in a large hangar and separate them into "kits" for installation and integration into the aircraft. Over the course of the next nine months, engineers and technicians from L-3 Communications Integrated Systems with help from German contractors will carefully install the telescope assembly into its new home aboard the SOFIA, a modified Boeing 747SP aircraft. Installation is scheduled to be completed by the spring of 2003, followed by a series of ground tests conducted at L-3 Communication's Waco flight test facility until the late fall of 2003. Flight tests will follow in Waco until spring of 2004.

SOFIA will be based at NASA Ames in California's Silicon Valley. Operational and scientific management of the observatory will be conducted for NASA by prime contractor Universities Space Research Association (USRA). United Airlines will be responsible for maintenance and flight operations.

SOFIA is scheduled to arrive at NASA Ames in May or June of 2004 for its final flight tests and is scheduled to begin full-scale astronomical observations in late 2004. Astronomical observations normally will be conducted several nights per week from altitudes of about 41,000 feet and higher, above about 99 percent of the infrared-obscuring water vapor in the Earth's atmosphere.

"The whole world is waiting for SOFIA, because this is going to be such a unique observatory and a major advancement over anything we currently have," said Dr. Thomas Greene, NASA SOFIA project scientist at NASA Ames. SOFIA will be considerably larger and much more sophisticated that its predecessor, the Kuiper Airborne Observatory, a remodeled C-141 cargo transport aircraft based at NASA Ames from 1971 to 1995 and whose telescope was 36 inches (0.91 meters) in diameter.

"SOFIA will make observations that are impossible for even the largest and highest of ground-based telescopes," Greene said. "The telescope will be unique in being able to observe star-forming regions, the center of our galaxy, and also disks around young stars, where planets have recently formed or are likely to have formed. The telescope will be able to observe very obscured regions of space where visible light isn't able to penetrate, and as such, will complement NASA's Hubble Space telescope that operates in visible light."

"The telescope has a hard job to do, because it will be operating in an aircraft while flying at 600 miles per hour," said Greene. As a result, the telescope has to be securely mounted and rigid to be able to track stars precisely. "Also, since it's an airborne observatory, the entire telescope is extremely lightweight," Greene said.

"SOFIA will be a world-class airborne observatory, and we're looking forward to the day when it will become operational," said USRA astronomer Eric Becklin, SOFIA's chief scientist and designated observatory director. "We expect it to help us make major contributions to our understanding of many important phenomena in the universe."

"The modification of SOFIA, one of the largest, most complex and challenging modifications to any 747, further underscores the capability of Integrated Systems," said Frank Lanza, chairman and chief executive officer of L-3 Communications. "The L-3 IS team has undertaken this challenge without the assistance of the original equipment manufacturer, which is even more remarkable than the modification itself."

NASA awarded a $484.2 million contract to Universities Space Research Association, Columbia, Md., in December 1996, to acquire, develop and operate SOFIA. Other team members include L-3 Communications Integrated Systems, Waco, Texas; United Airlines Services, San Francisco and United

Airlines, Chicago; the University of California, Los Angeles, Berkeley and Santa Cruz, Calif.; the Astronomical Society of the Pacific, San Francisco; and the SETI Institute, Mountain View, Calif.

NASA and DLR, the German space agency, are sharing SOFIA's project costs, with NASA funding 80 per cent of the costs and DLR the remaining 20 percent. Annual operating costs of SOFIA are anticipated to be about $40 million. For SOFIA images and information, see these four websites:

http://sofia.arc.nasa.gov

http://www.dlr.de/sofia

http://sofia.arc.nasa.gov/News/headline5/headline5.html

http://www.amesnews.arc.nasa.gov/releases/2002/02images/sofia/sofia.html

Note to Broadcasters about satellite feed information:

The NASA Television video file airs weekdays at noon (EST or EDT), with replays at 3 p.m., 6 p.m., 9 p.m., midnight, 3 a.m. and 9 a.m.

NASA TV VIDEO-FILE FOR SEPTEMBER 4, 2002

ITEM 1 - STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY RECEIVES NEW TELESCOPE - AMES

SOFIA, NASA'S STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY, THE LARGEST AIRBORNE OBSERVATORY IN THE WORLD, WILL RECEIVE A KEY COMPONENT TODAY WHEN ITS $95 MILLION TELESCOPE ASSEMBLY ARRIVES IN WACO, TEXAS, COMPLETING A 7,000-MILE JOURNEY FROM GERMANY. THIS EVENT IS A KEY STEP ON THE WAY TO COMPLETING A UNIQUE AND VERY VERSATILE ASTRONOMY FACILITY, WHICH WILL REVEAL HIDDEN REGIONS OF SPACE AND OPEN THE DOOR TO NEW VISTAS OF DISCOVERY.

(Note: There may be a follow-up NASA feed on Thursday, Sept. 5. Please check the NASA Television website for updates: http://www.nasa.gov/ntv/breaking.html)

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